

इंटरनेट

मानक

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Whereas the Parliament of India has set out to provide a practical regime of right to information for citizens to secure access to information under the control of public authorities, in order to promote transparency and accountability in the working of every public authority, and whereas the attached publication of the Bureau of Indian Standards is of particular interest to the public, particularly disadvantaged communities and those engaged in the pursuit of education and knowledge, the attached public safety standard is made available to promote the timely dissemination of this information in an accurate manner to the public.

“जानने का अधिकार, जीने का अधिकार”

Mazdoor Kisan Shakti Sangathan

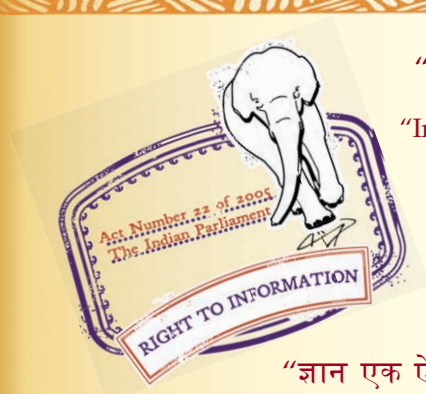
“The Right to Information, The Right to Live”

“पुराने को छोड़ नये के तरफ”

Jawaharlal Nehru

“Step Out From the Old to the New”

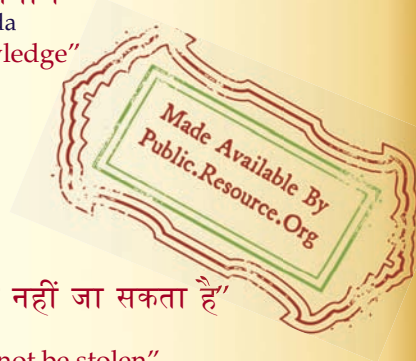
IS 8271-4-4 (1984): Quartz Crystal Units Used for Frequency Control and Selection, Part 4: Series AB for Oscillators, Section 4: Quartz Crystal Unit Type AB-04 [LITD 5: Semiconductor and Other Electronic Components and Devices]



“ज्ञान से एक नये भारत का निर्माण”

Satyanarayan Gangaram Pitroda

“Invent a New India Using Knowledge”



“ज्ञान एक ऐसा खजाना है जो कभी चुराया नहीं जा सकता है”

Bhartrhari—Nitiśatakam

“Knowledge is such a treasure which cannot be stolen”

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SPECIFICATION FOR
QUARTZ CRYSTAL UNITS USED FOR FREQUENCY
CONTROL AND SELECTION

PART 4 SERIES AB FOR OSCILLATORS
Section 4 Quartz Crystal Unit Type AB-04

- 0. General** — This standard shall be read in conjunction with IS : 8271 (Part 1)-1981 'Specification for quartz crystal units used for frequency control and selection: Part 1 General requirements and tests (first revision)'.
- 1. Outline and Dimensions** — Holder outline shall conform to Type AB (see Sheet 1A of IS : 4570-1968 Specification for crystal holders).
- 2. Marking** — See 8 of IS : 8271 (Part 1)-1981.
- 3. Construction and Workmanship** — See 7 of IS : 8271 (Part 1)-1981.
- 4. Test Schedule and Detail Requirements**
- 4.1 General Conditions for Test** — See 9.2 of IS : 8271 (Part 1)-1981.
- 4.2 Test Schedule** — The sequence and grouping of type, routine and acceptance tests shall be in accordance with 9.1 of IS : 8271 (Part 1)-1981.
- 4.3 Detail Requirements** — The detail requirements applicable to this particular type of control unit shall be as specified in Table 1.

TABLE 1 DETAIL REQUIREMENTS OF QUARTZ CRYSTAL UNIT TYPE AB-04

SI No. (1)	Characteristics (2)	Requirements (3)
i)	Type of holder	AB (see 1)
ii)	Frequency range	90 to 250 kHz
iii)	Frequency tolerance: Operating temperature range	± 30 ppm
iv)	Frequency stability	± 20 ppm
v)	Resonance resistance	See Table 2
vi)	Mode of oscillation	Fundamental
vii)	Load capacitance	32'0 ± 0'5 pF
viii)	Capacitance shunt	See Table 3
ix)	Reference temperature	75°C ± 1°C
x)	Temperature range:	
	a) Operating	70°C to 80°C
	b) Operable	— 55°C to + 70°C
xi)	Test set, calibration values and rated drive level	See Table 4
xii)	Shock [in accordance with 9.15 (severity A) of IS : 8271 (Part 1)-1981]:	
	a) Frequency Change permitted	+ 5 ppm — 10 ppm ± 15 percent
	b) Resonance resistance change permitted	
xiii)	Vibration [in accordance with 9.16 (severity A) of IS : 8271 (Part 4)-1981]:	
	a) Frequency change permitted	+ 5 ppm — 10 ppm ± 15 percent
	b) Resonance resistance change permitted	
xiv)	Temperature cycling:	
	a) Frequency change permitted	+ 5 ppm — 10 ppm ± 15 percent
	b) Resonance resistance change permitted	
xv)	Temperature run:	
	a) Frequency change permitted	+ 5 ppm — 10 ppm ± 15 percent
	b) Resonance resistance change permitted	
xvi)	Bond strength	From 90 to 170 kHz: 8 N, Min, and From 170 to 250 kHz: 7 N, Min

TABLE 2 RESONANCE RESISTANCE

[Table 1, Item (v)]

Frequency Range kHz	Maximum Resonance Resistance ohms
(1)	(2)
From 90 to 170	4 500
Over 170 to 250	5 000

TABLE 3 CAPACITANCE SHUNT

[Table 1, Item (viii)]

Frequency Range kHz	Capacitance Shunt* pF
(1)	(2)
From 90 to 170	$\frac{450}{f} + 1.2$
Over 170 to 250	$\frac{322}{f} + 1.2$

*Capacitance determined by formulae given is subject to a tolerance of ± 15 percent. The letter 'f' represents specified frequency in kHz.

TABLE 4 TEST SET, CALIBRATION VALUES AND RATED DRIVE LEVEL

[Table 1, Item (xi)]

Frequency Range	Calibration Values		Rated Drive Level	Test Set
	Resistance	Resistor Voltage Drop		
	ohms	Volts	mW	
(1)	(2)	(3)	(4)	(5)
From 90 to 170	3 200	2.53	2.0 ± 0.4	TS-710/TSM
Over 170 to 250	3 500	2.65	2.0 ± 0.4	

EXPLANATORY NOTE

This standard (Part 4/Sec 4) covers the requirements of crystal unit quartz, style QC-04 of JSS 50902 (1971) 'Detail specification for crystal unit, quartz, styles QC-03 and QC-04', issued by the Directorate of Standardization, Ministry of Defence (India).